

MISSOURI MONTHLY VITAL STATISTICS

Provisional Statistics

From The



MISSOURI DEPARTMENT OF HEALTH
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Focus. . .Racial Disparities in Infant Mortality and Low Birth Weight

Racial disparities in birth outcomes persist in Missouri, and elsewhere in the United States, despite a public health focus throughout the 1990's on reducing disparity. This report examines low birth weight and infant mortality by race for 1995-99 Missouri resident live births. Low birth weight (LBW), less than 2,500 grams or about 5.5 pounds, is a major predictor of infant health and survivability. Sixty-two percent of LBW births in Missouri are born prior to 37 weeks of gestation; the remainder are of 37 or more weeks' gestation, but underweight. Infant deaths (less than 12 months of age) are categorized as neonatal (less than one month) or post-neonatal (1-11 months).

African-American births are more likely to be LBW or result in infant death than any other racial/ethnic group (Table 1). In 1995-99, 13.7 percent of African-American births were LBW, more than twice the rate for all Hispanic and non-Hispanic white births. The disparity in infant death rates is even larger. The 15.6 infant death rate is more than 2.5 times the 6.1 non-Hispanic white rate. In both groups, almost two-thirds of infant deaths occur in the first month of life. The 10.3 African-American neonatal death rate far exceeds the rates of any other racial/ethnic group, while the post-neonatal death rate of 5.3 per 1,000 African-American births exceeds all rates but that for births to American Indian women.

Births to Hispanic women comprised 2.5 percent of all Missouri births in 1995-99. The Hispanic LBW and infant death rates are comparable to the rates for non-Hispanic whites. The

neonatal death rate is higher for Hispanics than non-Hispanic white births (4.6 v. 3.9 per 1,000), but the Hispanic post-neonatal death rate is lower (1.4 v. 2.2). Asian/Pacific Islander births are somewhat more likely than white births to be LBW (7.1 v. 6.6 percent), but less likely to result in infant death (4.2 v. 6.1 per 1,000).

The 1,268 births to American Indian women represent the smallest of the racial/ethnic groups, less than one-half percent of all Missouri births. After African-American births, American Indian births are most likely to be LBW (7.5 percent) or result in infant death (11.8 per 1,000). Sudden Infant Death Syndrome (SIDS) is a major cause of American Indian infant deaths. Four of the fifteen infant deaths among American Indian births resulted from SIDS.

In subsequent analysis, births are divided into two racial groups, African-American and non-African-American, and births to Hispanic women are assigned to one of these categories based on mother's race. In general, African-American outcomes are far worse than those for any other racial/ethnic group, and the small number of non-African-American minority births in Missouri makes detailed analysis difficult.

The distribution of African-American and non-African-American births by birth weight is presented in Table 2, with the infant mortality rates associated with each birth weight category. Very low birth weight (VLBW, less than 1,500 grams, or 3 lbs. 5 ounces) occurs in 3.1 percent of African-American

**Table 1: Low Birth Weight and Infant Deaths by Race and Ethnicity:
Missouri 1995 - 1999**

		-----Non-Hispanic-----					Hispanic
		All Births	White	African-American	Asian/PacIsl	Am-Indian	of Any Race
Low Birth Weight	per 100	7.7	6.6	13.7	7.1	7.5	6.3
Infant Deaths	per 1000	7.5	6.1	15.6	4.2	11.8 *	6.0
Neonatal Deaths	per 1000	4.9	3.9	10.3	2.8 *	6.3 *	4.6
Postneonatal Deaths	per 1000	2.7	2.2	5.3	1.4 *	5.5 *	1.4 *
Total Live Births		371,085	298,914	55,407	5,691	1,268	9,100

*Rate is unreliable, <20 events in numerator

NOTE: All births includes unknown race/ethnicity.

(continued on next page)

births, almost triple the VLBW rate among non-African-Americans. At this birth weight, infant mortality is high for both African-Americans (299.1 per 1,000 or 30 percent) and non-African-Americans (247.2 per 1,000). An additional 10.6 percent of African-American births are of moderately low birth weight (1,500-2,499 grams), almost double the non-African-American rate. The infant death rates associated with moderate LBW are 18.8 per 1,000 for African-Americans and 17.9 for non-African-Americans. Although African-American infant mortality exceeds that for non-African-Americans for both VLBW and moderate LBW, improvement in the African-American birth weight distribution would decrease much of the disparity between the races. For 1995-99, if African-American mothers had retained the same weight-specific infant mortality, but had the birth weight distribution of non-African-American births, the infant death rate would have fallen from 15.6 to 9.1 per 1,000 (a 42 percent decrease), saving 360 lives.

Although low birth weight is the major determinant of African-American infant mortality, non-LBW African-American infants also are at higher risk of death than their non-African-American counterparts (5.1 v. 2.5 per 1,000). The majority of infant deaths among non-LBW African-American births result from SIDS (28 percent) or injuries and other external

economic status. Within St Louis City there is less racial disparity in outcome.

The Kansas City metro area African-American disparity ratio of 2.56 for infant deaths is significantly lower than the disparity in the St Louis region. The African-American infant mortality rate for Kansas City is lower than for St Louis metro African-Americans (14.7 v. 16.1 per 1,000) and Kansas City area non-African-American infant mortality is slightly higher than for St Louis (5.4 v. 5.7), resulting in the smaller disparity ratio. These Kansas City regional statistics do not include residents of the primarily white and affluent Kansas suburbs or the more urbanized and minority residents of Kansas City, Kansas. Most African-American births (89 percent) in the Kansas City metro region are to women residing within the Kansas City limits. The smaller number of African-American residents living outside the city limits have the lowest rate of LBW (11.4 percent) and infant mortality (12.1 per 1,000) among Missouri African-Americans, and the best socio-economic profile.

Of the regions examined the Bootheel region of Missouri has the highest rate of African-American LBW (15.2 percent) and infant mortality (16.8 per 1,000) in Missouri, as well as the highest percentage of births to teen mothers (36.3), women with less than 12 years education (28.2) and food stamp recipients

Table 2
Infant Deaths by Birth Weight and Race: Missouri 1992 - 1996

<i>Birth weight</i>	<i>Percent of Births</i>		<i>Infant Deaths per 1,000</i>	
	<i>African-American</i>	<i>Non-African-American</i>	<i>African-American</i>	<i>Non-African-American</i>
<1,500 g -----	3.1	1.1	299.1 H	247.2
1,500-2,499 g -----	10.6	5.5	18.8	17.9
2,500 g + -----	86.3	93.4	5.1 H	2.5
Total -----	100.0	100.0	15.6 H	6.1
Number of births, deaths	55,672	306,926	867	1,875

H: Rate is significantly higher ($p < 0.05$) than Non-African-American rate.

causes (35 percent). Among non-African-Americans, SIDS deaths represent 17 percent of infant deaths among non-LBW infants, with injuries and other external causes accounting for an additional 20 percent.

Geographic variation in LBW, infant mortality, and socio-economic status as indicated by the percent of births occurring to teen mothers, women of low educational attainment, and food stamp recipients are presented in Table 3. Data are presented for the three regions with the highest concentration of African-American births: the metropolitan regions of St Louis and Kansas City, and the Bootheel region of Missouri.

In the St Louis metro region we find the greatest racial disparities for LBW and infant mortality. The 13.8 African-American LBW rate in the St Louis metro area, is 2.2 times the non-African-American rate. The disparity ratio for infant deaths is higher at 2.99. The St Louis metro region also has the greatest disparity in the percent of births to teen mothers, women with low educational attainment, and food stamp participation. The St Louis region is further categorized as St Louis City or the remaining metro area. LBW and infant mortality for both African-American and non-African-American St Louis City residents is higher than their counterparts in the rest of the metro area, and both racial groups in the city are of lower socio-

(68.8). The Bootheel region, however, also has the state's highest rate of non-African-American LBW (8.6 percent) and infant death (7.3), and non-African-American socio-economic status is lower in the Bootheel region than elsewhere in Missouri.

As previously stated, recognition of the racial disparities in LBW and infant mortality have long been observed. The changes in African-American and non-African-American LBW and infant mortality between 1985 and 1999 are presented in Table 4. Low birth weight among African-American births increased from 13.0 percent in 1985-89 to 13.9 percent from 1995-99. Non-African-American LBW also increased during the same period, however, from 5.7 to 6.7 percent. Because the increase was greater among non-African-Americans, the disparity ratio in LBW between African-Americans and non-African-Americans decreased from 2.28 for 1985-99 to 2.07 for 1995-99.

While LBW has increased, both African-American and non-African-American infant mortality rates have decreased. Non-African-American infant mortality fell 30 percent, from 8.7 per 1,000 in 1985-89 to 6.1 in 1995-99. In the same period, the African American infant death rate was reduced only nine percent, from 17.2 per 1,000 in 1985-89 to 15.6 in 1995-99. The

Table 3
Low Birth Weight and Infant Deaths, with Selected Birth Characteristics by Area of Residence and Race:
Missouri 1995 - 1999

	Number of births		Low Birth Weight (Percent)			Infant Death (per 1,000)			
	African-American	Non-African-American	African-American	Non-African-American	Ratio	African-American	Non-African-American	Ratio	
St Louis Metro Region	34,703	98,417	13.8	6.2	2.20	16.1	5.4	2.99	
St Louis City	18,342	10,260	14.5	7.6	1.91	16.9	7.1	2.38	
Rest of Region	16,361	88,157	12.9	6.1	2.12	15.2	5.2	2.93	
Kansas City Metro Region	14,226	58,293	13.5	6.4	2.10	14.7	5.7	2.56	
Kansas City	12,659	22,350	13.8	6.8	2.02	15.0	6.8	2.21	
Rest of Region	1,567	35,943	11.4	6.2	1.84	12.1	5.1	2.38	
Bootheel Region	2,386	8,709	15.2	8.6	1.77	16.8	7.3	2.28	
Rest of Missouri	4,357	149,994	12.7	6.9	1.85	13.8	6.7	2.05	
Missouri Total	55,672	315,413	13.7	6.6	2.06	15.6	6.1	2.54	
	Teen Births (Percent)			Educ<12, Age 19+ (Percent)			Food Stamps (Percent)		
	African-American	Non-African-American	Ratio	African-American	Non-African-American	Ratio	African-American	Non-African-American	Ratio
St Louis Metro Region	23.7	7.4	2.30	23.0	8.7	2.63	48.1	8.2	5.87
St Louis City	27.2	10.7	2.54	30.8	20.1	1.54	58.0	21.7	2.67
Rest of Region	19.7	7.0	2.82	14.7	7.5	1.98	37.1	6.6	5.59
Kansas City Metro Region	25.3	10.8	2.33	21.3	12.8	1.66	42.9	11.5	3.73
Kansas City	26.3	10.6	2.48	22.7	16.6	1.37	45.0	13.3	3.38
Rest of Region	17.0	11.0	1.55	11.1	10.5	1.05	25.5	10.4	2.44
Bootheel Region	36.3	20.9	1.74	28.2	24.6	1.15	68.8	30.6	2.25
Rest of Missouri	25.3	15.0	1.69	18.8	16.2	1.16	42.6	17.7	2.40
Missouri Total	24.8	12.0	2.06	22.4	13.4	1.67	47.3	13.9	3.39

infant mortality disparity between groups therefore rose from 1.98 to 2.54.

The risk factors for low birth weight were examined in an earlier report on racial disparities among 1992-96 births¹. As indicated in the earlier report, and confirmed in 1995-99 data, prenatal smoking, late or no prenatal care, teenage births, advanced maternal age, and high parity, are associated with significantly increased risk for LBW among both African- and non-African-Americans. These risk factors, however, do not account for the racial disparity in LBW. For example, while prenatal smoking among 1995-99 births was associated with a 77 percent increase in risk for LBW among African-Americans and an 87 percent increased risk for non-African-Americans, only 14 percent of African-American women smoked during pregnancy, compared with 20 percent of non-African-American women.

In summary, African-American births in Missouri, as in the Nation, remain at much greater risk of poor pregnancy outcome

than other racial and ethnic groups. The poor birth weight distribution of African-American births is the major contributor to African-American infant mortality. Low socio-economic status, as well as prenatal smoking, inadequate prenatal care, and high parity all contribute to low birth weight, but do not explain most of the disparity between African-American and non-African-American low birth weight. Infant mortality not associated with low birth weight is also higher for African-Americans. Placing infants on their backs to sleep, and avoidance of prenatal and postnatal tobacco exposure reduces SIDS risk, a major contributor to infant mortality among normal-weight births of all races, along with injury-induced deaths.

Improved family planning, better understanding of the processes leading to premature birth, and more innovative interventions to promote behaviors that are conducive to healthy pregnancies, including early and continuous prenatal care, are among public health's most important challenges in the 21st century.

Footnote:

¹Missouri Monthly Vital Statistics, Vol. 32, No 9, November 1998.

Table 4
Low Birth Weight and Infant Death rate by Year of Birth and Race:
Missouri 1998 - 1999

Year of Birth	Low Birth Weight (Percent)			Infant Death (per 1,000)		
	African-American	Non-African-American	Odds Ratio	African-American	Non-African-American	Odds Ratio
1985 - 1989	13.0	5.7	2.28	17.2	8.7	1.98
1990 - 1994	13.6	6.1	2.21	16.5	7.2	2.29
1995 - 1999	13.9	6.7	2.07	15.6	6.1	2.54



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Provisional Vital Statistics for February 2001

Live births decreased in February as 5,685 Missouri babies were born compared with 6,210 in February 2000. However, cumulative births for January - February and the 12 months ending with February both show increases.

Deaths decreased in February as 4,798 Missourians died compared with 4,956 one year earlier. Cumulative deaths for the 12 months ending with February decreased by 3.7 percent.

The Natural increase for Missouri in February was 887 (5,685 minus 4,798 deaths). The Natural Increase for the 12

months ending with February rose by 14 percent.

Marriages increased in February, but decreased for the cumulative 2- and 12- months ending with February.

Dissolutions of marriage decreased in February, but increased for the 12 months ending with February.

Infant deaths increased for February and January - February. However, for the 12 months ending with February the infant death rate decreased from 7.7 to 7.3 per 1,000 live births.

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Item	February				Jan.-Feb.cumulative				12 months ending with February				
	Number		Rate*		Number		Rate*		Number		Rate*		
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	1999	2000	2001
Live Births	6,210	5,685	14.0	13.1	12,461	13,274	13.6	14.6	76,806	77,662	13.6	13.8	13.9
Deaths	4,956	4,798	11.2	11.1	10,977	10,903	11.8	12.0	56,161	54,100	9.6	10.1	9.7
Natural increase...	1,254	887	2.8	2.0	1,484	2,371	1.6	2.6	20,645	23,562	4.0	3.7	4.2
Marriages	2,357	2,401	5.3	5.5	5,068	4,896	5.4	5.4	45,136	43,553	7.8	8.1	7.8
Dissolutions	2,083	1,707	4.7	3.9	4,506	3,791	4.8	4.2	25,519	25,749	4.6	4.6	4.6
Infant deaths	51	52	8.2	9.1	96	122	7.7	9.2	592	567	7.8	7.7	7.3
Population base (in thousands)	...	...	5,595	5,642	...	...	5,595	5,642	...	...	5,507	5,555	5,591

* Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1000 estimated population. The infant death rate is based on the number of infant deaths per 1000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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